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XVIII. *An Account of ſome curious Fiſhes, ſent from* Hudſon's Bay; *by Mr.* John Reinhold Forſter, *F. R. S. in a Letter to* Thomas Pennant, *Eſq*; *F. R. S.*

DEAR SIR,

Read Jan. 28, 1773. THE Governor and Committee of the Hudſon's Bay Company preſented the Royal Society with a choice collection of ſkins of quadrupeds, many fine birds, and ſome fiſh, collected by their ſervants at the ſeveral ports in Hudſon's Bay; the Committee of the Royal Society, for examining and deſcribing theſe curioſities, did me the honour to refer them to me for examination. I wiſh the following obſervations on the fiſh, which I take the liberty to addreſs to you, as a lover of Natural Hiſtory, and my remarks on the birds and quadrupeds, may convey ſuch informations concerning the zoology of North America, in the ſtudy of which you have made ſuch vaſt progreſs; and ſo particularize the animals of the *Arctic* part of that vaſt continent, that nothing further may prevent

your favouring the public with the reſult of your ſtudies on that ſubject.

The four kinds of Hudſon's Bay fiſh are the *Sturgeon*, the *Burbot*, the *Gwiniad*, and a new fiſh called the *Sucker* at Hudſon's Bay.

The Sturgeon was about fourteen inches long, and therefore ſeems to be a young fiſh; as it is likewiſe obſerved in the liſt, written by the Gentleman who ſent this fiſh from York Fort.

Description.

Its noſe is very long and ſlender, terminating in a point; the eyes are ſmall; under the projecting ſnout, before the mouth, are four beards or *cirri*, placed nearly in the ſame line, and not by pairs, as in ſome other ſpecies of Sturgeon. The mouth is beneath, nearly oppoſite the eyes, toothleſs, cartilagineous, ſemilunar when in its natural poſition, but round when open; on each ſide are two noſtrils. The whole head is depreſſed, and very nearly quadrangular; the whole body pentagonal, and tapering towards the tail; the whole ſkin tough, covered with five rows of uncinated ſcales; the dorſal ſeries conſiſts of fourteen large roundiſh ſcales, and a ſingle one behind the dorſal fin; each of the lateral rows has 35 oblique ſcales; in the two ventral rows are nine roundiſh ſtrong ſcales between the pectoral and ventral fins; one ſcale is behind the vent, and ſtill another behind the anal fin.

The fiſh, according to this deſcription, ſeems to come the neareſt to that ſpecies of Sturgeon which I de-

I described in the Philos. Transactions, Vol. LVII. in my *Specimen Historiæ Naturalis Volgensis*, N° 10. under the name of *Acipenser Ruthenus major, rostro elongato acuminato, paululum supino*, and which the Russians call *Sevruga*. Kramer, in his *Elenchus Vegetabilium & Animalium Austriæ*, p. 383. is the only writer that I know who takes notice of this species; he calls it *Acipenser rostro acuto, corpore tuberculis spinosis aspero:* the inhabitants of Austria call it *Shirk*, a name they have no doubt borrowed from the Slavonian name *Sevruga*. The famous painter and traveller Cornelys de Bruyn mentions this kind of fish, but in so superficial a manner, that one plainly sees he was little, if at all, used to discussions in points of Natural History. He says, * "the *Sterlet* is the "best fish in Russia; there are two species of it; "but, upon the whole, it is nearly related to the "Sturgeon. The *Severukas* differ in nothing from "the Sturgeon, which the Russians call *Assetrina*. "The Caviar is made from the *Beluga*, the *Assetrina*, and the *Severuka*." Had de Bruyn examined the *Sevruga*, he would certainly have found it materially different from the *Osetr* or *Assetrina*, i. e. the common blunt-nosed Sturgeon of Germany and the Baltick. I suppose the English Sturgeon, from your own description †, and the drawing in the British Zoology, illustrated by plates, tab. LXXXIX. to be the same with this kind from Hudson's Bay, and with the *Sevruga* of the Russians, and the *Shirk* of the Austrians. The true Sturgeon, which gave

* De Bruyn's Voyage, Tom. I. &c. Amsterd. fol. p. 93.
† Br. Zool. octavo, Vol. III. p. 99.

the

the name to the whole genus *, I think to be an unknown fiſh in England. The ſpecies of Sturgeons are more numerous than one is at firſt aware of; and it would therefore be of ſome utility, that perſons, who have an opportunity of examining all the various kinds at Vienna, and in Ruſſia, might do it with more care than has hitherto been done. Some of the ſorts which I have ſeen, I have ſo deſcribed that they may be known again; ſome I did not ſee, and gave their characters from books, and from the reports of ſuch perſons as had examined them. Mr. Klein, a very ingenious naturaliſt, has enumerated ten Sturgeons, in his 4th *Miſſus Piſcium*, p. 11—16. and Count Marſigli, in his ſplendid work about the Danube, Tom. IV. gives the names of at leaſt ſix Sturgeons, but the characters are not ſufficiently ſettled in both theſe works. Klein ſaw but two kinds of Sturgeons, and a third in ſpirits; and Count Marſigli was not enough of a naturaliſt to give adequate deſcriptions of theſe fiſh. Therefore it is certain that a careful examination and accurate account of the ſeveral ſpecies of Sturgeons would greatly illuſtrate the Natural Hiſtory of this genus.

The ſecond of the Hudſon's Bay fiſh, is called, by the wild natives of that country, *Marthy*, and is nothing elſe than our common Burbot, *Gadus Lota*, Linn. only vaſtly ſuperior in ſize. The deſcriptions

* The Germans call this fiſh *Stoer*, from the old Teutonic word *Stor* or *Stuhr*, which ſignifies *great*, as this fiſh grows to a very large ſize. Thus likewiſe the Scotch call the *Tunny*, Mackrel *Sture*. Vide Mr. Pennant's Tour in Scotland, p. 192.

you

you have given of this fiſh, in the Britiſh Zoology, is entirely correſponding with this ſpecimen, ſo that it would be ſuperfluous to preſume to make any additions to it. I muſt, however, obſerve, that, after a moſt minute examination, I could find no more than ſix branchioſtegous rays in the two ſpecimens from Hudſon's Bay, of which you mention ſeven in the Engliſh Burbot, and Artedi as many in his ſpecimens. This great naturaliſt ſeems likewiſe to be right, when he obſerves that the *cirri*, or beards on the end of the noſe, are the valves to one of the noſtrils; for I found that theſe beards, on their under-ſide, opened into a hole, correſponding with the lower noſtril. Mr. Andrew Graham, the collector of the Natural Hiſtory ſpecimens at Severn River in Hudſon's Bay, obſerves, that theſe fiſh conſtantly ſwim cloſe to the ground, and are extremely voracious; for he repreſents them as not content with devouring every fiſh * they can overcome, but likewiſe feeding on putrefying deer, or other carrion that comes in their way; even ſtones are ſometimes ſwallowed to ſatisfy their inſatiable appetite, of which Mr. Graham was himſelf a witneſs, having taken a ſtone of a pound weight out of the ſtomach of this fiſh. The pike is often obliged to fall a victim, together with the trout, *Tickomeg*, and others, to this rapacious fiſh. After ſunſet, it is caught by a night-hook. It does not maſticate its food before deglutition. Its roe and liver are reckoned a delicacy, when freſh caught; but they turn rancid and

* This ſize is the fiſh that makes ſuch havock in the Lake of Geneva. P.

oily in a few days, though kept frozen ſolid all the time. At Hudſon's Bay this fiſh is thought to be dry and inſipid; its weight is from one to eight pounds.

The third ſpecies of fiſh, from this cold climate, is by the natives called *Tickomeg*, and is our *Gwiniad* or *Salmo Lavaretus*, Linn.; only the ſize is ſomewhat bigger, for the greateſt ſpecimen ſent over meaſures 18 inches from the head to the tip of the tail, is $4\frac{1}{5}$ inches deep, and not above an inch and $\frac{1}{4}$ thick. This fiſh differs in no circumſtance from our Gwiniad, but the length. You mentioned in your Britiſh Zoology (Vol. III. p. 269.) a *Ferra* or *Gwiniad* from Switzerland 15 inches long, as an uncommon ſize *; the Hudſon's Bay fiſh, as I have before obſerved, is 18 inches long, and $4\frac{1}{5}$ inches its greateſt depth. The great abundance of food, and the ſmall number of inhabitants, who let the fiſh grow up undiſturbed, are perhaps the cauſes of their uncommon bigneſs. They weigh from $1\frac{1}{2}$ pound to 3 pounds, ſays Mr. Graham; but, I am ſure, the fiſh I examined muſt, when freſh, have weighed more. Theſe fiſh abound in the River Severn in Hudſon's Bay, from its origin in the great lakes to its mouth, where it empties itſelf into the bay. The natives catch five or ſix hundred a day, by means of wears which they contrive in the river: they will not take bait, and are poor at the breaking of the ice in the river. In the middle of the ſummer, after a gale of wind,

* However, the Gwiniads of Lapland, a ſimilar climate to that of the Hudſon's Bay, are vaſtly large. Brit. Zool. III. 267. note.

they are often found thrown up into the marſhes, and on the ſhoals, where they remain at the receſs of the water and abating of the wind, and ſerve as food to numbers of crows. The inhabitants of Hudſon's Bay think this fiſh very ſweet, and good to eat, contrary to the opinion of many Europeans.

The fourth and laſt fiſh brought from Hudſon's Bay is there called a *Sucker*, becauſe it lives by ſuction, according to Mr. Graham's account, who likewiſe ſays, that there are two varieties of this fiſh, both of a whitiſh colour, but one diſtinguiſhed by a mixture of beautiful red. In the ſmalleſt of two ſpecimens brought over, a broad ſtripe of red could be obſerved all along the *linea lateralis*. They are very numerous in the creeks and rivers, and troubleſome in overburdening the nets. They are not deemed a palatable food, being very ſoft, and full of ſmall bones. They weigh from one half to 2½ pounds.

The above is literally what Mr. Graham ſays of this fiſh, and all that is known of its natural hiſtory. Examining it carefully, I found it was a new ſpecies of the genus of *Cyprinus*, or *Carp*.

The head is broader than the body, gradually decreaſing towards the noſe, full of elevations and tubercles, nearly quadrangular, and not ſcaly. The mouth is quite under the head, as in the *Loricariæ*, when ſhut, ſemilunar; when open, round; not far from the extremity of the ſnout, and included in ſmall round lips. To the under-lip is fixed a bilobated, beard-like, papilloſe caruncula; it has no teeth. The

eyes are large, but the colour of the iris could not be determined. The number of the branchioſtegous rays is three. The body is flat, tapering towards the tail, and ſcaly. The greater ſpecimen meaſures very near 15 inches from the noſe to the extremity of the tail; next to the head it is nearly two inches thick, about the dorſal fin $1\frac{1}{4}$ inch; its greateſt depth before the ventral fins is $2\frac{4}{5}$ inches. On the ſnout are about five round prominent tubercles; two noſtrils are found on each ſide, the biggeſt next before the eye is kidney-ſhaped. The covers of the gills are double, and divided; the head has ſeveral ſutures; over each eye, in a cavity, are two longitudinal ones, joined oppoſite the noſtrils by a ſtill ſhorter tranſverſe one; on the covers of the gills are two, on each ſide one, beginning near the lobes of the caruncula of the under-lip, and going up arched towards the eye. Near the extremity of the ſnout begins on each ſide a longitudinal one; it paſſes under the eye, and mounts in a curvature behind it, then it goes on ſtraight to the end of the head, where it again gets downwards, and joins the lateral line. Where the head joins to the body, theſe two ſutures are connected by a tranſverſal one, which, as it were, ſeparates the head from the body. The lateral line at firſt deſcends from the head, but then runs on ſtraight, rather nearer the back than the body, to the beginning of the tail. The ſcales are ſmall near the head and back, increaſing in ſize towards the middle and tail, cloſe to which they are again ſmaller. The dorſal fin is placed ſomewhat behind the equilibrium of the fiſh, rhomboidal, and conſiſting of twelve ſtrong branched rays. The pectoral fins are lanceo-

Cyprinus Catostomus. *The Sucker.*

J.t Basire Sculp.

lanceolated, fixed under the covers of the gills, and have 17 rays. The ventral fins have 10 or 11 rays, and are placed in the middle of the belly, and under the dorſal fin. The anal fin conſiſts of eight branched ſtrong rays. The tail is ſomewhat forked or concave, and conſiſts of ſeventeen rays.

I have been as circumſtantial as poſſible in deſcribing this new ſpecies, and join here, together with a drawing [See TAB. VI.], a Latin ſcientific deſcription of the ſame.

I am,

With the trueſt regard,

DEAR SIR,

Your moſt obedient,

humble ſervants,

Jn° Reinhold Forſter.

N° 2. Somerſet Stable-yard, Strand,
January 12, 1772.

Κατω

Κατω
infra
Στομαος. } CYPRINUS Catoſtomus.

CYPRINUS pinna ani radiis VIII. labio imo caruncula bilobata papilloſa, cauda bifida. Pinnæ D. 12. P. 17. V. 10.—11. A. 8. C. 17.
Habitat in Sinus Hudſonis fluminibus copioſe, ſugendo paſcitur. Anglis, the *Sucker*.

DESCR. *Caput* ſubtetragonum, verſus apicem ſenſim attenuatum, obtuſiuſculum, corpore fere craſſius, & minus latum.

Tubercula globoſa, confertiora in apice roſtri, circiter quinque; carinata & acuminata, in vertice ſparſa.

Foramina (ſive nares) gemina, quorum alterum minus, alterum oculis proximum, majus, reniforme.

Oculi magni, ad marginem ſuperficiei verticalis capitis ſiti, fere in medio inter apicem & baſin. *Irides* . . . . .

Opercula branchiarum magna, nuda; at ſub oculis opercula ſpuria, primo intuitu pro radiis membranæ branchioſtegæ facile ſumenda.

Suturæ in capite plures catenulatæ; una utrinque brevis, ſupra oculos, nareſque, nec baſin nec apicem capitis attingens, è regione narium juncta per ſuturam tranſverſalem breviſſimam; ſecunda utrinque incipiens ad angulum loborum carunculæ,

carunculæ, imo labio adnata, in operculo ſpurio recurvatur, & prope oculos deſinit: tertia utrinque incipiens prope roſtri apicem, linea recta ſub oculis ducta, dein curvatur & aſcendit verſus verticem; ibi rurſus curvatur & jungitur lineæ laterali, pone aperturam branchialem deſcendenti: connectuntur hæ duæ lineæ laterales ſutura tranſverſa, quæ caput à reliquo corpore diſtinguit.

Membrana Branchioſtega, radiis tribus brevibus, validis.

Rictus inferus, lunulatus, ſeu ſemiorbicularis, labiis incluſus tenuibus, ſuperiore (ore ſcilicet clauſo) concavo, inferiore convexo.

Caruncula lata, labio inferiori adnata, craſſiuſcula, carnoſa, papillis tecta, oris angulos ambiens, medio in lobos binos profunde diviſa.

Corpus lateribus compreſſiuſculum, at verſus abdomen magis compreſſum, cuneiforme, capite ad caudam ſenſim attenuatum, tectum ſquamis minoribus, ovatis, ſtriatis verſus caput minimis, pallide argenteis, in quibuſdam circa lineam lateralem aureo-rubris.

Linea lateralis recta, dorſo parallela, ad caput ſuper aperturam branchialem adſcendens.

Anus

Anus parvus, caudæ multo proprior quam capiti.

Pinna dorſi pone æquilibrium nonnihil poſita, rhomboidalis, radiis validis, ramoſis duodecim.

Pinnæ pectorales lanceolatæ, infra opercula ſitæ radiis 17 longitudine partem quartam totius piſcis (excluſis capite & caudâ) æquant.

Pinnæ ventrales radiis 10 vel 11 oblongæ, in medio ventris, ſub pinna dorſali poſitæ, pinna pectorali dimidio breviores.

Pinna ani caudæ propinqua, longitudine fere pinnæ pectoralis, radiis octo validis, ramoſis.

Cauda leviter bifurca, pinnam pectoralem longitudine & numero radiorum æquans.

Longitudo totius piſcis unciarum 15 pedis Anglicani.

Latitudo unciarum circiter 3 ante pinnas ventrales.

Craſſities corporis prope caput unciarum fere 2, ante pinnam dorſalem unciæ & quadrantis.

P. S. Beſides the above-mentioned fiſh, the ſervants of the Hudſon's Bay Company have likewiſe ſent over from thence the common *River Crayfiſh* (Cancer Aſtacus, *Linn.*), which, in every particular, correſponds with the Engliſh one.

Received